UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

SABLE NETWORKS, INC. AND SABLE IP, LLC,	Civil Action No. 6:21-cv-261
Plaintiffs,	**JURY TRIAL DEMANDED**
v.	
CLOUDFLARE, INC.,	
Defendant.	

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Sable Networks, Inc. and Sable IP, LLC (collectively, "Sable" or "Plaintiffs") bring this action and make the following allegations of patent infringement relating to U.S. Patent Nos. 6,954,431 (the "'431 patent") and 7,012,919 (the "'919 patent"); and 8,243,593 (the "'593 patent") (collectively, the "patents-in-suit").[1] Defendant Cloudflare, Inc. ("Cloudflare" or "Defendant") infringes the patents-in-suit in violation of the patent laws of the United States of America, 35 U.S.C. § 1 *et seq*.

INTRODUCTION

1.   The patents-in-suit arise from technologies developed by Dr. Lawrence G. Roberts

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[1] Prior to filing this First Amended Complaint, Sable proposed to Cloudflare that the parties file a joint motion to dismiss the '593 patent without prejudice in light of Sable's prior narrowing of the asserted claims from the '593 patent and the Court's order denying Sable's motion to amend its '593 infringement contentions to re-assert previously dropped claims. Dkt. 168 (Order denying motion to amend). On January 20, 2023, Cloudflare informed Sable that it would not agree to Sable's proposed joint motion. As such, the '593 patent remains asserted herein. Sable anticipates filing an opposed motion to dismiss its claim for infringement of the '593 patent without prejudice.

– one of the founding fathers of the internet.[2] The patents relate to technologies for efficiently managing the flow of data packets over routers and switch devices. Dr. Roberts and engineers at Caspian Networks, Inc. and later Sable Networks, Inc. developed these technologies to address the increasing amount of data sent over computer networks.

2.   Dr. Roberts is best known for his work as the Chief Scientist of the Advanced Research Projects Agency (ARPA) where he designed and oversaw the implementation of ARPANET, the precursor to the internet. Dr. Roberts' work on ARPANET played a key role in the development of digital network transmission technologies.[3] Initially, ARPANET was used primarily to send electronic mail and Dr. Roberts developed the first program for reading and sending electronic messages.


Keenan Mayo and Peter Newcomb, *How The Web Was Won*, VANITY FAIR at 96-97 (January 7, 2009); *One of the Engineers Who Invented the Internet Wants to Build A Radical new Router*, IEEE SPECTRUM MAGAZINE (July 2009); Katie Hafner, *Billions Served Daily, and Counting*, N.Y. TIMES at G1 (December 6, 2001)("Lawrence Roberts, who was then a manager at the Advanced Research Projects Agency's Information Processing Techniques Office, solved that problem after his boss began complaining about the volume of e-mail piling up in his in box. In 1972,

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[2] Chris Woodford, THE INTERNET: A HISTORICAL ENCYCLOPEDIA VOLUME 2 at 204 (2005) ("Widely regarded as one of the founding fathers of the Internet, Lawrence Roberts was the primary architect of ARPANET, the predecessor of the Internet.").

[3] Katie Hafner, *Lawrence Roberts, Who Helped Design Internet's Precursor,* N.Y. TIMES at A2 (December 31, 2018) ("Dr. Roberts was considered the decisive force behind packet switching, the technology that breaks data into discrete bundles that are then sent along various paths around a network and reassembled at their destination.").

Dr. Roberts produced the first e-mail manager, called RD, which included a filing system, as well as a Delete function.").

3.   Dr. Roberts' work on ARPANET played a key role in the development of packet switching networks. Packet switching is a digital network transmission process in which data is broken into parts which are sent independently and reassembled at a destination. Electronic messages sent over the ARPANET were broken up into packets then routed over a network to a destination. "In designing the ARPANET, Roberts expanded on the work he'd done at MIT, using those tiny data packets to send information from place to place."[4] Packet switching has become the primary technology for data communications over computer networks.
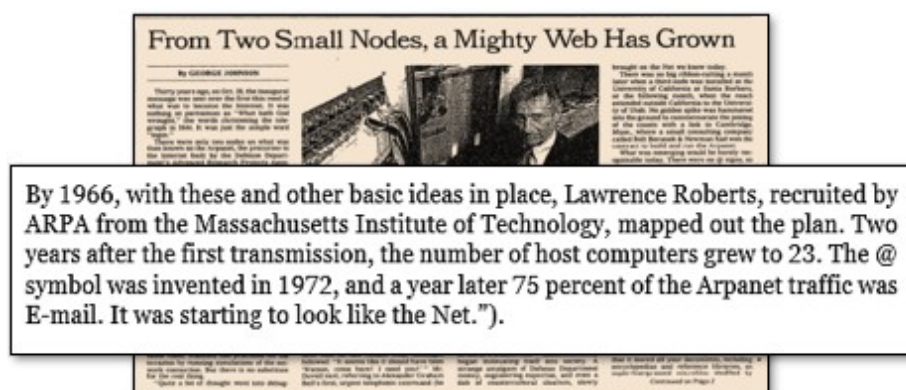
George Johnson, *From Two Small Nodes, a Mighty Web Has Grown*, N.Y. TIMES at F1 (October 12, 1999).

4.   After leaving ARPANET, Dr. Roberts grew increasingly concerned that existing technologies for routing data packets were incapable of addressing the increasing amounts of data traversing the internet.[5] Dr. Roberts identified that as the "Net grows, the more loss and

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[4] Code Metz, *Larry Roberts Calls Himself the Founder of The Internet. Who Are You To Argue*, WIRED MAGAZINE (September 24, 2012); John C. McDonald, FUNDAMENTALS OF DIGITAL SWITCHING at 211 (1990) ("The ARPANET was, in part, an experimental verification of the packet switching concept. Robert's objective was a new capability for resource sharing.").
[5] eWeek Editors, *Feeling A Little Congested,* EWEEK MAGAZINE (September 24, 2001) ("Lawrence Roberts, one of the primary developers of Internet precursor ARPANet and CTO of

transmission of data occurs. Eventually, gridlock will set in."[6]

> ***The Internet is broken. I should know: I designed it***. In 1967, I wrote the first plan for the ancestor of today's Internet, the Advanced Research Projects Agency Network, or ARPANET, and then led the team that designed and built it. The main idea was to share the available network infrastructure by sending data as small, independent packets, which, though they might arrive at different times, would still generally make it to their destinations. The small computers that directed the data traffic-I called them Interface Message Processors, or IMPs-evolved into today's routers, and for a long time they've kept up with the Net's phenomenal growth. Until now.

Lawrence Roberts, *A Radical New Router*, IEEE SPECTRUM Vol. 46(7) at 34 (August 2009) (emphasis added).

5.   In 1998, Dr. Roberts founded Caspian Networks.[7] At Caspian Networks, Dr. Robers developed a new kind of internet router to efficiently route packets over a network. This new router was aimed at addressing concerns about network "gridlock." In a 2001 interview with Wired Magazine, Dr. Roberts discussed the router he was developing at Caspian Networks – the Apeiro. "Roberts says the Apeiro will also create new revenue streams for the carriers by solving the 'voice and video problem.' IP voice and video, unlike email and static Web pages, breaks down dramatically if there's a delay - as little as a few milliseconds - in getting packets from host to recipient."[8]

Caspian Networks, recently released research indicating that Net traffic has quadrupled during the past year alone.").

[6] Michael Cooney, *Can ATM Save The Internet,* NETWORK WORLD at 16 (May 20, 1996); Lawrence Roberts, A RADICAL NEW ROUTER, IEEE Spectrum Vol. 46 34-39 (August 2009).

[7] Caspian Networks, Inc. was founded in 1998 as Packetcom, LLC and changed its name to Caspian Networks, Inc. in 1999.

[8] John McHugh, *The n-Dimensional Superswitch*, WIRED MAGAZINE (May 1, 2001).

Jim Duffy, *Router Newcomers take on Cisco, Juniper*, NETWORK WORLD at 14 (April 14, 2013); Stephen Lawson, *Caspian Testing Stellar Core Offering*, NETWORK WORLD at 33 (December 17, 2001); Tim Greene, *Caspian Plans Superfast Routing For The 'Net Core*, NETWORK WORLD at 10 (January 29, 2001); Andrew P. Madden, *Company Spotlight: Caspian Networks*, MIT TECHNOLOGY REVIEW at 33 (August 2005); and Loring Wirbel, *Caspian Moves Apeiro Router To Full Availability*, EE TIMES (April 14, 2003).

6.   The Apeiro debuted in 2003. The Apeiro, a flow-based router, can identify the nature of a packet – be it audio, text, or video, and prioritize it accordingly. The Apeiro included numerous technological advances including quality of service (QoS) routing and flow-based routing.

7.   At its height, Caspian Networks Inc. raised more than $300 million dollars and grew to more than 320 employees in the pursuit of developing and commercializing Dr. Roberts' groundbreaking networking technologies, including building flow-based routers that advanced quality of service and load balancing performance. However, despite early success with its technology and business, Caspian hit hard times when the telecommunications bubble burst.

8.   Sable Networks, Inc. was formed by Dr. Sang Hwa Lee to further develop and commercialize the flow-based networking technologies developed by Dr. Roberts and Caspian

Networks.[9] Sable Networks, Inc. has continued its product development efforts and has gained

commercial success with customers in Japan, South Korea, and China. Customers of Sable

Networks, Inc. have included: SK Telecom, NTT Bizlink, Hanaro Telecom, Dacom Corporation,

USEN Corporation, Korea Telecom, China Unicom, China Telecom, and China Tietong.

SK Telecom and Sable Networks Sign Convergence Network Deal, COMMS UPDATE –
TELECOM NEWS SERVICE (February 4, 2009) ("South Korean operator SK Telecom has
announced that it has signed a deal with US-based network and solutions provider Sable
Networks."); *China Telecom Deploys Sable*, LIGHT READING NEWS FEED (November 19,
2007) ("Sable Networks Inc., a leading provider of service controllers, today announced that China
Telecom Ltd, the largest landline telecom company in China, has deployed the Sable Networks
Service Controller in their network.").

9.   Armed with the assets of Caspian Networks Inc. as well as members of Caspian

Networks' technical team, Sable Networks, Inc. continued the product development efforts

stemming from Dr. Roberts' flow-based router technologies. Sable Networks, Inc. developed

custom application-specific integrated circuits ("ASIC") designed for flow traffic management.

Sable Network, Inc.'s ASICs include the Sable Networks SPI, which enables 20 Gigabit flow

processing. In addition, Sable Networks, Inc. developed and released S-Series Service Controllers

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[9] Dr. Lee, through his company Mobile Convergence, Ltd. purchased the assets of Caspian
Networks Inc. and subsequently created Sable Networks, Inc.

(*e.g.*, S80 and S240 Service Controller models) that contain Sable Networks' flow-based programmable ASICs, POS and Ethernet interfaces, and carrier-hardened routing and scalability from 10 to 800 Gigabits.

SABLE NETWORKS S-SERIES SERVICE CONTROLLERS (showing the S240-240G Multi-Shelf System, S80-80G Single-Shelf System, and S20-20G Stand-Alone System).

10.   Sable pursues the reasonable royalties owed for Cloudflare's use of the inventions claimed in Sable's patent portfolio, which arise from Caspian Networks and Sable Networks' groundbreaking technology.

SABLE'S PATENT PORTFOLIO

11.   Sable's patent portfolio includes over 34 patent assets, including 14 granted U.S. patents. Dr. Lawrence Roberts' pioneering work on QoS traffic prioritization, flow-based switching and routing, and the work of Dr. Roberts' colleagues at Caspian Networks Inc. and Sable Networks, Inc. are claimed in the various patents owned by Sable.

12.   Highlighting the importance of the patents-in-suit is the fact that the Sable's patent portfolio has been cited by over 1,000 U.S. and international patents and patent applications assigned to a wide variety of the largest companies operating in the computer networking field.

Sable's patents have been cited by companies such as:

- Cisco Systems, Inc.[10]
- Juniper Networks, Inc.[11]
- Broadcom Limited [12]
- EMC Corporation[13]
- F5 Networks, Inc.[14]
- Verizon Communications Inc.[15]
- Microsoft Corporation[16]
- Intel Corporation[17]
- Extreme Networks, Inc.[18]
- Huawei Technologies Co., Ltd.[19]

THE PARTIES

SABLE NETWORKS, INC.

13.   Sable Networks, Inc. ("Sable Networks") is a corporation organized and existing under the laws of the State of California.

14.   Sable Networks was formed to continue the research, development, and commercialization work of Caspian Networks Inc., which was founded by Dr. Lawrence Roberts

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[10] *See, e.g.*, U.S. Patent Nos. 7,411,965; 7,436,830; 7,539,499; 7,580,351; 7,702,765; 7,817546; 7,936,695; 8,077,721; 8,493,867; 8,868,775; and 9,013,985.

[11] *See, e.g.*, U.S. Patent Nos. 7,463,639; 7,702,810; 7,826,375; 8,593,970; 8,717,889; 8,811,163; 8,811,183; 8,964,556; 9,032,089; 9,065,773; and 9,832,099.

[12] *See, e.g.*, U.S. Patent No. 7,187,687; 7,206,283; 7,266,117; 7,596,139; 7,649,885; 8,014,315; 8,037,399; 8,170,044; 8,194,666; 8,271,859; 8,448,162; 8,493,988; 8,514,716; and 7,657,703.

[13] *See, e.g.*, U.S. Patent Nos. 6,976,134; 7,185,062; 7,404,000; 7,421,509; 7,864,758; and 8,085,794.

[14] *See, e.g.*, U.S. Patent Nos. 7,206,282; 7,580,353; 8,418,233; 8,565,088; 9,225,479; 9,106,606; 9,130,846; 9,210,177; 9,614,772; 9,967,331; and 9,832,069.

[15] *See, e.g.*, U.S. Patent Nos. 7,349,393; 7,821,929; 8,218,569; 8,289,973; 9,282,113; and 8,913,623.

[16] *See, e.g.*, U.S. Patent Nos. 7,567,504; 7,590,736; 7,669,235; 7,778,422; 7,941,309; 7,636,917; 9,571,550; and 9,800,592.

[17] *See, e.g.*, U.S. Patent Nos. 7,177,956; 7,283,464; 9,485,178; 9,047,417; 8,718,096; 8,036,246; 8,493,852; and 8,730,984.

[18] *See, e.g.*, U.S. Patent Nos. 7,903,654; 7,978,614; 8,149839; 10,212,224; 9,112,780; and 8,395,996.

[19] *See, e.g.*, U.S. Patent Nos. 7,903,553; 7,957,421; 10,015,079; 10,505,840; and Chinese Patent Nos. CN108028828 and CN106161333.

to provide flow-based switching and routing technologies to improve the efficiency and quality of computer networks.

15.   Sable Networks is the owner by assignment of all of the patents-in-suit.

SABLE IP, LLC

16.   Sable IP, LLC ("Sable IP") is a Delaware limited liability company with its principal place of business at 225 S. 6th Street, Suite 3900, Minneapolis, Minnesota 55402. Pursuant to an exclusive license agreement with Sable Networks, Sable IP is the exclusive licensee of the patents-in-suit.

CLOUDFLARE, INC.

17.   Cloudflare, Inc. ("Cloudflare"), is a Delaware corporation with its principal place of business at 101 Townsend Street, San Francisco, CA 94107. Cloudflare may be served through its registered agent Registered Agent Solutions, Inc., 1701 Directors Blvd., Suite 300, Austin, Texas 78744. Cloudflare is registered to do business in the State of Texas and has been since at least August 9, 2019.

18.   Cloudflare conducts business operations within the Western District of Texas where it sells, develops, and/or markets its products including facilities at 106 E. 6th Street, Suite 350, Austin, Texas 78701.

JURISDICTION AND VENUE

19.   This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

20.   This Court has personal jurisdiction over Cloudflare in this action because Cloudflare has committed acts within the Western District of Texas giving rise to this action and

has established minimum contacts with this forum such that the exercise of jurisdiction over Cloudflare would not offend traditional notions of fair play and substantial justice. Defendant Cloudflare, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit. Moreover, Cloudflare is registered to do business in the State of Texas, has offices and facilities in the State of Texas, and actively directs its activities to customers located in the State of Texas.

21.   Venue is proper in this district under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Defendant Cloudflare is registered to do business in the State of Texas, has offices in the State of Texas, has transacted business in the Western District of Texas and has committed acts of direct and indirect infringement in the Western District of Texas.

22.   Cloudflare has a regular and established place of business in this District and has committed acts of infringement in this District. Cloudflare has permanent office locations at 106 E. 6th Street, Suite 350, Austin, Texas 78701, which is located within this judicial District.

23.   Cloudflare employs several hundred full-time personnel such as engineers, executives, and sales personnel in this District, including in Austin, Texas. Cloudflare has also committed acts of infringement in this District by commercializing, marketing, selling, distributing, testing, and servicing certain Accused Products.

24.   This Court has personal jurisdiction over Cloudflare. Cloudflare has conducted and does conduct business within the State of Texas. Cloudflare, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), ships, distributes, makes, uses, offers for sale, sells, imports, and/or advertises (including by providing an interactive web page) its products and/or services in the United States and the Western District of Texas and/or contributes

to and actively induces its customers to ship, distribute, make, use, offer for sale, sell, import, and/or advertise (including the provision of an interactive web page) infringing products and/or services in the United States and the Western District of Texas. Cloudflare, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Western District of Texas. These infringing products and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Western District of Texas. Cloudflare has committed acts of patent infringement within the Western District of Texas. Cloudflare interacts with customers in Texas, including through visits to customer sites in Texas. Through these interactions and visits, Cloudflare directly infringes the patents-in-suit.

25.   Cloudflare has minimum contacts with this District such that the maintenance of this action within this District would not offend traditional notions of fair play and substantial justice. Thus, the Court therefore has both general and specific personal jurisdiction over Cloudflare.

<div align="center">**THE ASSERTED PATENTS**</div>

U.S. PATENT NO. 6,954,431

26.   U.S. Patent No. 6,954,431 entitled, *Micro-Flow Management*, was filed on December 6, 2001, and claims priority to April 19, 2000. The '431 patent is subject to a 35 U.S.C. § 154(b) term extension of 722 days. Sable Networks, Inc. is the owner by assignment of the '431 patent. Sable IP is the exclusive licensee of the '431 patent. A true and correct copy of the '431 patent is attached hereto as Exhibit A.

27.   The '431 patent discloses novel methods and systems for managing data traffic comprising a plurality of micro-flows through a network.

28.   The inventions disclosed in the '431 patent improve the quality of service in data transmissions over a computer network by relying on per micro-flow state information that enables rate and delay variation requirements to be within set quantified levels of service.

29.   The '431 patent discloses technologies that speed the rate at which data can effectively travel over a computer network by optimizing packet discarding.

30.   The '431 patent discloses the use of micro-flow state information to determine the rate of each flow, thus optimizing discards and optimizing the quality of service of data transmission.

31.   The '431 patent discloses methods and systems that avoid networking system degradation by not overloading network switch buffers.

32.   The '431 patent discloses a method for managing data traffic through a network that determines a capacity of a buffer containing a micro-flow based on a characteristic.

33.   The '431 patent discloses a method for managing data traffic through a network that assigns an acceptable threshold value for the capacity of the buffer over a predetermined period of time.

34.   The '431 patent discloses a method for managing data traffic through a network that delegates a portion of available bandwidth in the network to the micro-flow.

35.   The '431 patent discloses a method for managing data traffic through a network that uses the buffer for damping jitter associated with the micro-flow.

36.   The '431 patent has been cited by 103 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '431 patent as

relevant prior art:

- Cisco Systems, Inc.
- Juniper Networks, Inc.
- Broadcom Limited
- Intel Corporation
- Sun Microsystems, Inc.
- Oracle Corporation
- Samsung Electronics Co., Ltd.
- Adtran, Inc.
- Time Warner Cable, Inc.
- FSA Technologies, Inc.
- Internap Corporation
- France Telecom
- The Boeing Company
- Wistaria Trading, Ltd.

37.   At a minimum, Cloudflare was aware of the '431 patent, and that its products accused of infringing the '431 patent, likely infringed the '431 patent as of the data of filing of the initial complaint (March 15, 2021, *see* Dkt. No. 1), and certainly by the date Cloudflare filed its Answer (May 24, 2021, *see* Dkt. No. 16).

U.S. PATENT NO. 7,012,919

38.   U.S. Patent No. 7,012,919 entitled, *Micro-Flow Label Switching*, was filed on December 8, 2000, and claims priority to April 19, 2000. The '919 patent is subject to a 35 U.S.C. § 154(b) term extension of 1,069 days.   Sable Networks, Inc. is the owner by assignment of the '919 patent.   Sable IP is the exclusive licensee of the '919 patent.   A true and correct copy of the '919 patent is attached hereto as Exhibit B.

39.   The '919 patent claims specific methods and systems for providing aggregate micro-flows.

40.   The technologies claimed in the '919 patent improve data transmission in computer networks by providing micro-flow based label switched path utilization.

41.   The inventions taught in the '919 patent achieve improvements in intelligent network traffic engineering protocols by providing load balancing based on the utilization of individual label switched paths.

42.   In one embodiment described in the '919 patent, a method for providing an aggregate micro-flow having intelligent load balancing is disclosed.

43.   In this embodiment, a set of label switched paths is defined for a network domain, and as the network receives a set of data packets, a micro-flow comprising the set of data packets is defined.

44.   The '919 patent further discloses including a quality of service type in addition to the information included in each data packet.

45.   The '919 patent teaches selecting a label switched path from the defined set of label switched paths based on the quality of service type of the micro-flow.

46.   The '919 patent discloses a method for providing aggregate micro-flows that defines a set of label switched paths.

47.   The '919 patent discloses a method for providing aggregate micro-flows that defines a micro-flow comprising a set of data packets, the micro-flow having a quality of service type.

48.   The '919 patent discloses a method for providing aggregate micro-flows that selects a particular label switched path from the defined set of label switched paths based on the quality of service type of the micro-flow.

49.   The '919 patent discloses a method for providing aggregate micro-flows that transmits the micro-flow along the selected label switched path, the micro-flow having an

associated forwarding equivalence class, the forwarding equivalence class defining additional transmission constraints for the micro-flow.

50.   The '919 patent has been cited by 242 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '919 patent family as relevant prior art.

- Cisco Systems, Inc.
- Juniper Networks, Inc.
- Advanced Micro Devices, Inc.
- AT&T, Inc.
- Broadcom, Inc.
- Brocade Communications Systems, Inc.
- Arris Enterprises LLC
- Nicira, Inc.
- Extreme Networks, Inc.
- Fortinet, Inc.
- Foundry Networks, Inc.
- Fujitsu Ltd.
- Intel Corporation
- Huawei Technologies Co., Ltd.
- Hitachi, Ltd.
- Hewlett Packard Enterprise Company
- Marlow Technologies, LLC
- Microsoft Corporation
- ServiceNow, Inc.
- Telefonaktiebolaget LM Ericsson
- Telcordia Technologies, Inc.
- Riverbed Technology, Inc.
- Uber Technologies, Inc.
- The Regents of the University of California
- Verizon Communications, Inc.

51.   At a minimum, Cloudflare was aware of the '919 patent, and that its products accused of infringing the '919 patent, likely infringed the '919 patent as of the date of filing of the initial complaint (March 15, 2021, *see* Dkt. No. 1), and certainly by the date Cloudflare filed its Answer (May 24, 2021, *see* Dkt. No. 16).

U.S. PATENT NO. 8,243,593

52.   U.S. Patent No. 8,243,593 entitled, *Mechanism for Identifying and Penalizing Misbehaving Flows in a Network*, was filed on December 22, 2004. The '593 patent is subject to a 35 U.S.C. § 154(b) term extension of 1,098 days. Sable Networks, Inc. is the owner by assignment of the '593 patent. Sable IP is the exclusive licensee of the '593 patent. A true and correct copy of the '593 patent is attached hereto as Exhibit C.

53.   The '593 patent discloses novel methods and systems for processing a flow of a series of information packets.

54.   The inventions disclosed in the '593 patent teach technologies that permit the identification and control of less desirable network traffic.

55.   Because the characteristics of data packets in undesirable network traffic can be disguised, the '593 patent improves the operation of computer networks by disclosing technologies that monitor the characteristics of flows of data packets rather than ancillary factors such as port numbers or signatures.

56.   The '593 patent discloses tracking the behavioral statistics of a flow of data packets that can be used to determine whether the flow is undesirable.

57.   The '593 patent further discloses taking actions to penalize the flow of undesirable network traffic.

58.   The '593 patent discloses a method for processing a flow of a series of information packets that maintains a set of behavioral statistics for the flow, wherein the set of behavioral statistics is updated based on each information packet belonging to the flow, as each information packet is processed.

59.   The '593 patent discloses a method for processing a flow of a series of information

packets that determines, based at least partially upon the set of behavioral statistics, whether the flow is exhibiting undesirable behavior.

60.   The '593 patent discloses that the determination as to whether the flow is exhibiting undesirable behavior is made regardless of the presence or absence of congestion.

61.   The '593 patent discloses a method for processing a flow of data packets that enforces a penalty on the flow in response to a determination that the flow is exhibiting undesirable behavior.

62.   The '593 patent has been cited by 17 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '593 patent as relevant prior art.

- Cisco Systems, Inc.
- AT&T, Inc.
- International Business Machines Corporation
- Telecom Italia S.p.A.
- McAfee, LLC

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 6,954,431

63.   Plaintiffs reference and incorporate by reference the preceding paragraphs of this Complaint as if fully set forth herein.

64.   Cloudflare designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for managing data traffic comprising a plurality of micro-flows through a network.

65.   Cloudflare designs, makes, sells, offers to sell, imports, and/or uses Cloudflare Gen 6 Edge Servers, Gen 7 Edge Servers, Gen 8 Edge Servers, Gen 9 Edge Servers, Gen 10 Edge Servers, and Gen 11 Edge Servers which incorporate eXpress Data Path (XDP) / eBPF (extended

Berkeley Packet Filter), Stream, Cloudflare Magic Transit, and/or flowtrackd functionality (collectively, the "Cloudflare '431 Product(s)").

66.   One or more Cloudflare subsidiaries and/or affiliates use the Cloudflare '431 Products in regular business operations.

67.   One or more of the Cloudflare '431 Products include technology for managing data traffic comprising a plurality of micro-flows through a network.

68.   One or more of the Cloudflare '431 Products determine the capacity of a buffer containing a micro-flow based on a characteristic.

69.   One or more of the Cloudflare '431 Products assign an acceptable threshold value for the capacity of the buffer over a predetermined period of time.

70.   One or more of the Cloudflare '431 Products delegate a portion of available bandwidth in the network to the micro-flow.

71.   The Cloudflare '431 Products enable the setting of thresholds for a buffer that include the ability to set a threshold as a percentage of the buffer.

72.   One or more of the Cloudflare '431 Products use the buffer for damping jitter associated with the micro-flow.

73.   The Cloudflare '431 Products use buffers to limit jitter which is delay variance.

74.   Cloudflare has directly infringed and continues to directly infringe the '431 patent by, among other things, making, using, offering for sale, and/or selling technology for managing data traffic comprising a plurality of micro-flows through a network, including but not limited to the Cloudflare '431 Products.

75.   The Cloudflare '431 Products are available to businesses and individuals throughout the United States.

76.   The Cloudflare '431 Products are provided to businesses and individuals located in the Western District of Texas.

77.   By making, using, testing, offering for sale, and/or selling products and services for managing data traffic comprising a plurality of micro-flows through a network, including but not limited to the Cloudflare '431 Products, Cloudflare has injured Plaintiffs and is liable to Plaintiffs for directly infringing one or more claims of the '431 patent, including at least claim 19 pursuant to 35 U.S.C. § 271(a).

78.   Cloudflare has had knowledge of the '431 patent since at least service of this Complaint or shortly thereafter, and Cloudflare knew of the '431 patent and knew of its infringement, including by way of this lawsuit.

79.   The '431 patent is well-known within the industry as demonstrated by multiple citations to the '431 patent in published patents and patent applications assigned to technology companies and academic institutions. Cloudflare is utilizing the technology claimed in the '431 patent without paying a reasonable royalty. Cloudflare is infringing the '431 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

80.   By at least the date the initial Complaint was filed, and certainly by the date Cloudflare served its initial Answer, Cloudflare knew or should have known that it infringed the '431 patent. Cloudflare's infringement of the '431 patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of enhanced damages for up to three times the actual damages awarded and attorney's fees to Sable pursuant to 35 U.S.C. §§ 284-285.

81.   Since the filing of Sable's original complaint, Cloudflare has persisted in its

infringement of the Cloudflare '431 Products, through the continued use, sale, and offers to sell the Cloudflare '431 Products, and has made no effort to abate its continued infringement of the '431 patent.

82.   Moreover, Cloudflare has continued to expand its use, sales, and offers to sell the Cloudflare '431 Products after this suit was filed, including through continued development of the Cloudflare '431 Products and the addition of additional infringing functionality to the Cloudflare '431 Products. Cloudflare has done so with deliberate disregard to Sable's rights in the '431 patent and knowledge of Sable's allegations of patent infringement. Cloudflare's actions are even more flagrant given that it has been in possession of Sable's preliminary infringement contentions since June 23, 2021, and has been in possession of Sable's final infringement contentions since January 13, 2023.

83.   Cloudflare has also acted in deliberate disregard of the validity of the '431 patent. During this litigation, Cloudflare petitioned for *inter partes* review ("IPR") of the '431 patent. The Patent Trial and Appeal Board rejected that petition and refused to institute IPR, finding that Cloudflare failed to demonstrate a reasonable likelihood that it would prevail in invalidating the '431 patent.

84.   Cloudflare has therefore proceeded to infringe the '431 patent with full and complete knowledge of its applicability to the Cloudflare '431 Products without taking a license and without a good faith belief that the '431 patent is invalid and not infringed. At a minimum, Cloudflare willfully blinded itself to its infringement of the '431 patent and consciously refused to engage Sable in its efforts to license the '431 patent.

85.   Cloudflare's infringement of the '431 patent thus occurs with knowledge of infringement, objective recklessness, and/or willful blindness, and has been and continues to be

willful and deliberate. Thus, Cloudflare's infringement of the '431 patent is willful and deliberate, entitling Sable to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

86.   To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '431 patent.

87.   As a result of Cloudflare's infringement of the '431 patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Cloudflare's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cloudflare together with interest and costs as fixed by the Court.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 7,012,919

88.   Plaintiffs reference and incorporate by reference the preceding paragraphs of this Complaint as if fully set forth herein.

89.   Cloudflare designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for providing an aggregate micro-flow.

90.   Cloudflare designs, makes, sells, offers to sell, imports, and/or uses Cloudflare Gen 6 Edge Servers, Gen 7 Edge Servers, Gen 8 Edge Servers, Gen 9 Edge Servers, Gen 10 Edge Servers, and Gen 11 Edge Servers which include functionality for transmitting a data flow over a network connection including, but not limited to, Cloudflare Magic Transit, Argo Smart Routing, WARP, Magic Firewall, and Traffic Manager (collectively, the "Cloudflare '919 Product(s)").

91.   One or more Cloudflare subsidiaries and/or affiliates use the Cloudflare '919 Products in regular business operations.

92.   One or more of the Cloudflare '919 Products include technology for transmitting data flows over a network connection.

93.   One or more of the Cloudflare '919 Products receive a first aggregate flow comprising a plurality of individual data flows at an ingress line card, each individual data flow comprising a plurality of data packets.

94.   One or more of the Cloudflare '919 Products separate the first aggregate flow into a plurality of individual micro-flows at the ingress line card, each individual micro-flow comprising a data flow.

95.   One or more of the Cloudflare '919 Products route the micro-flows to an egress line card, the egress line card being selected based on a quality of service of each individual micro-flow.

96.   One or more of the Cloudflare '919 Products assemble the plurality of individual micro-flows into a second aggregate flow having a quality of service capable of supporting the quality of service of the plurality of micro-flows, the assembling being performed at the egress line card.

97.   One or more of the Cloudflare '919 Products transmit the second aggregate flow over a network connection.

98.   The Cloudflare '919 Products are available to businesses and individuals throughout the United States.

99.   The Cloudflare '919 Products are provided to businesses and individuals located in the Western District of Texas.

100.   Cloudflare has directly infringed and continues to directly infringe the '919 patent by, among other things, making, using, offering for sale, and/or selling technology for providing an aggregate micro-flow, including but not limited to the Cloudflare '919 Products.

101.   By making, using, testing, offering for sale, and/or selling products and services,

including but not limited to the Cloudflare '919 Products, Cloudflare has injured Plaintiffs and is liable for directly infringing one or more claims of the '919 patent, including at least claim 25, pursuant to 35 U.S.C. § 271(a).

102.   Cloudflare has had knowledge of the '919 patent since at least service of this Complaint or shortly thereafter, and Cloudflare knew of the '919 patent and knew of its infringement, including by way of this lawsuit.

103.   The '919 patent is well-known within the industry as demonstrated by multiple citations to the '919 patent in published patents and patent applications assigned to technology companies and academic institutions. Cloudflare is utilizing the technology claimed in the '919 patent without paying a reasonable royalty. Cloudflare is infringing the '919 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

104.   By at least the date the initial Complaint was filed, and certainly by the date Cloudflare served its initial Answer, Cloudflare knew or should have known that it infringed the '919 patent. Cloudflare's infringement of the '919 patent has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of enhanced damages for up to three times the actual damages awarded and attorney's fees to Sable pursuant to 35 U.S.C. §§ 284-285.

105.   Since the filing of Sable's original complaint, Cloudflare has persisted in its infringement of the Cloudflare '919 Products, through the continued use, sale, and offers to sell the Cloudflare '919 Products, and has made no effort to abate its continued infringement of the '919 patent.

106.   Moreover, Cloudflare has continued to expand its use, sales, and offers to sell the

Cloudflare '919 Products after this suit was filed, including through continued development of the Cloudflare '919 Products and the addition of additional infringing functionality to the Cloudflare '919 Products. Cloudflare has done so with deliberate disregard to Sable's rights in the '919 patent and knowledge of Sable's allegations of patent infringement. Cloudflare's actions are even more flagrant given that it has been in possession of Sable's preliminary infringement contentions since June 23, 2021, and has been in possession of Sable's final infringement contentions since January 13, 2023.

107.   Cloudflare has also acted in deliberate disregard of the validity of the '919 patent. During this litigation, Cloudflare petitioned for *inter partes* review ("IPR") of the '919 patent. The Patent Trial and Appeal Board rejected that petition and refused to institute IPR, finding that Cloudflare failed to demonstrate a reasonable likelihood that it would prevail in invalidating the '919 patent.

108.   Cloudflare has therefore proceeded to infringe the '919 patent with full and complete knowledge of its applicability to the Cloudflare '919 Products without taking a license and without a good faith belief that the '919 patent is invalid and not infringed. At a minimum, Cloudflare willfully blinded itself to its infringement of the '919 patent and consciously refused to engage Sable in its efforts to license the '919 patent.

109.   Cloudflare's infringement of the '919 patent thus occurs with knowledge of infringement, objective recklessness, and/or willful blindness, and has been and continues to be willful and deliberate. Thus, Cloudflare's infringement of the '919 patent is willful and deliberate, entitling Sable to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

110.   To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met

with respect to the '919 patent.

111.   As a result of Cloudflare's infringement of the '919 patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Cloudflare's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cloudflare together with interest and costs as fixed by the Court.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 8,243,593

112.   Plaintiffs reference and incorporate by reference the preceding paragraphs of the Complaint as if fully set forth herein.

113.   Cloudflare designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for processing a flow of a series of information packets.

114.   Cloudflare designs, makes, sells, offers to sell, imports, and/or uses CloudFlare DDoS Protection, including Cloudflare Gatebot functionality, eXpress Data Path (XDP) / eBPF (extended Berkeley Packet Filter) packet processing, and flowtrackd functionality (collectively, the "Cloudflare '593 Product(s)").

115.   One or more Cloudflare subsidiaries and/or affiliates use the Cloudflare '593 Products in regular business operations.

116.   One or more of the Cloudflare '593 Products include technology for processing a flow of a series of information packets. Specifically, the Cloudflare '593 Products maintain a set of behavioral statistics based on each and every information packet belonging to a flow.

117.   The Cloudflare '593 Products are available to businesses and individuals throughout the United States.

118.   The Cloudflare '593 Products are provided to businesses and individuals located in the Western District of Texas.

119.   Cloudflare has directly infringed and continues to directly infringe the '593 patent by, among other things, making, using, offering for sale, and/or selling products and services for processing a flow of a series of information packets.

120.   The Cloudflare '593 Products maintain a set of behavioral statistics for the flow, wherein the set of behavioral statistics is updated based on each information packet belonging to the flow, as each information packet is processed.

121.   The Cloudflare '593 Products enable the generation of behavioral statistics based on each packet that is processed.

122.   The Cloudflare '593 Products determine, based at least partially upon the set of behavioral statistics, whether the flow is exhibiting undesirable behavior.

123.   The Cloudflare '593 Products determine whether the flow is exhibiting undesirable behavior regardless of the presence or absence of congestion.

124.   The Cloudflare '593 Products enforce a penalty on the flow in response to a determination that the flow is exhibiting undesirable behavior.

125.   By making, using, testing, offering for sale, and/or selling products and services for processing a flow of a series of information packets, including but not limited to the Cloudflare '593 Products, Cloudflare has injured Plaintiffs and is liable for directly infringing one or more claims of the '593 patent, including at least claim 5, pursuant to 35 U.S.C. § 271(a).

126.   Cloudflare has had knowledge of the '593 patent since at least service of this Complaint or shortly thereafter, and Cloudflare knew of the '593 patent and knew of its infringement, including by way of this lawsuit.

127.   The '593 patent is well-known within the industry as demonstrated by multiple citations to the '593 patent in published patents and patent applications assigned to technology

companies and academic institutions. Cloudflare is utilizing the technology claimed in the '593 patent without paying a reasonable royalty. Cloudflare is infringing the '593 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

128.   To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '593 patent.

129.   As a result of Cloudflare's infringement of the '593 patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Cloudflare's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cloudflare together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs Sable IP, LLC and Sable Networks, Inc. respectfully request that this Court enter:

A.   A judgment in favor of Plaintiffs that Cloudflare has infringed, either literally and/or under the doctrine of equivalents, the '431, '919, and '593 patents;

B.   An award of damages resulting from Cloudflare's acts of infringement in accordance with 35 U.S.C. § 284;

C.   A judgment and order finding that Cloudflare's infringement was willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate within the meaning of 35 U.S.C. § 284 and awarding to Plaintiffs enhanced damages;

D.   A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiffs their reasonable attorneys' fees

against Cloudflare; and

E.   Any and all other relief to which Plaintiffs may show themselves to be entitled.

JURY TRIAL DEMANDED

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiffs Sable Networks,

Inc. and Sable IP, LLC request a trial by jury of any issues so triable by right.

Dated: January 20, 2023   Respectfully submitted,

                                           /s/ John K. Harting
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and Sable IP, LLC

<u>Certificate of Service</u>

I hereby certify that on January 20, 2023, I caused a true and correct copy of the

foregoing document, Sable's First Amended Complaint for Patent Infringement, to be served via

email on counsel of record.

Dated: January 20, 2023   */s/ John K. Harting*
                                                         John K. Harting